11 Mbps

Wireless Access Point

User's Manual

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Introduction

Thank you for purchasing the *Action*tec 11 Mbps Wireless Access Point. This Wireless Access Point is easy to use and easy to setup. If you like the freedom of accessing your network from anywhere within your home or office, then take your networking to the next level with the *Action*tec 11 Mbps Wireless Access Point. You will be able to have full access to your network and share files, printers and even your High-Speed Internet access.

Package Contents

Make sure the following items came in this package:

- *Action*tec 11 Mbps Wireless Access Point and power adapter
- *Action*tec 11 Mbps Wireless Access Point Installation CD-ROM
- This User's Manual and Quick Start Installation Guide
- Warranty Card

Minimum System Requirements

- PC Computer with an Ethernet Adapter configured for TCP/IP.
- Internet Browser (Microsoft Explorer, Netscape Navigator, etc..).
- Microsoft Windows 2000/Windows Millennium Edition, Windows 98, Second Edition (SE), XP/Windows NT 4.0

Contacting Technical Support

*Action*tec Electronics prides itself on making high-quality, durable, high-performance products. If you should need assistance, the *Action*tec Technical Support Department is available seven days a week from 6 am to 11pm (Mountain Time), to provide professional support.

Action**tec Electronics, Inc.**
760 N. Mary Avenue
Sunnyvale, CA 94085

Phone: 1-719-884-8300 E-mail: techsupp@actiontec.com

Introduction to Wireless Networks

A wireless network connects computers to each other using radio technology that allows you the freedom to move around the area and to work anywhere within reach of an Access Point.

The *Action*tec 11 Mbps Wireless Access Point can be connected to a wired network, allowing communication between the wired network and computers using *Action*tec 11 Mbps Wireless PC Cards. This technology is an extension to the existing Ethernet networking standard, so you can connect the *Action*tec Wireless Access Point to an existing Ethernet network.

Adding Access Points to Your Network

Placement and connection of the *Action*tec Wireless Access Point depends entirely on your specific (network) environment. The *Action*tec Wireless Access Point can be used for the following configurations:

- Creating a wireless network.
- Extending an existing wired Ethernet network.
- Connecting to a single computer.

Creating a Wireless Network

Your *Action*tec Wireless Access Point can be used to setup a wireless network as shown in Figure 1. Follow the steps below to create a wireless network.

Figure 1: Creating a Wireless Network

Note: Refer to the appropriate user manual for successful installation of your wireless network.

1. Prepare one computer that you will want to connect wirelessly. (Install wireless network card and software).

2. Configure the IP settings for this client computer.

3. Install the *Action*tec Wireless Access Point.

4. Your 802.11b wireless network is now ready.

5.For further functionality and security, the *Action*tec Wireless Access Point can be configured using the *Action*tec Wireless Access Point Configuration utility and the Web Interface.

6. Install other client computers if this is applicable to your environment

Extending a Wired Network with One or More Wireless Access Points

When the *Action*tec Wireless Access Point is used as an extension to a wired network (figure 2), please make sure that the current wired network is completely functional.

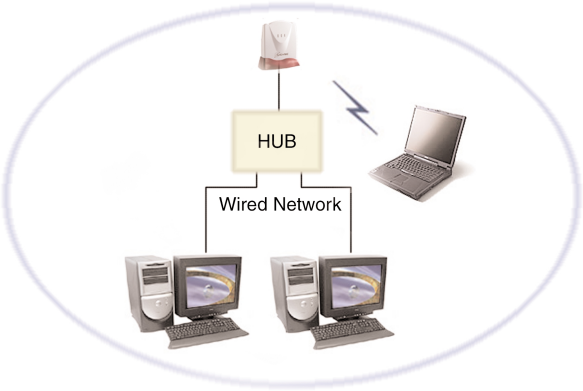


Figure 2: Extending a Wired Network

Follow these steps to extend you wired network:

1. Install the *Action*tec Wireless Access Point and connect it to your wired network via an open Ethernet port in your switch or hub.

2. You can now use the wireless network.

3. For further functionality and security, the *Action*tec Wireless Access Point can be configured using the *Action*tec Wireless Access Point Configuration utility and the Web Interface

4. Install the wireless client computer(s).

Connecting an Access Point Directly to a Computer

Your *Action*tec Wireless Access Point can be connected directly to your computer as shown in figure 3.

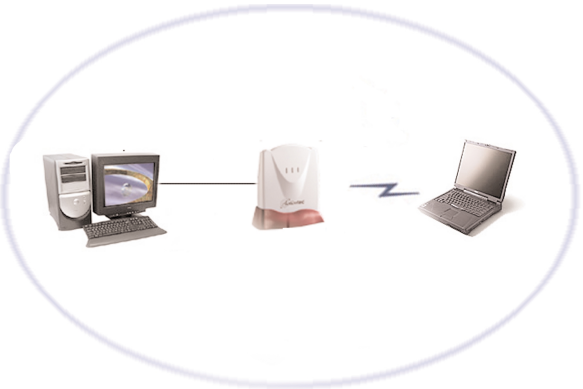


Figure 3: Connecting Directly to a Computer

Note: Refer to the appropriate user manual for successful installation of your wireless network.

Follow these steps to connect your *Action*tec Wireless Access Point directly to your computer:

1. Install a network interface card (NIC) in the computer you want to connect the *Action*tec Wireless Access Point to.

2. Configure the IP settings for this client.

3. Install the Access Point.

   Note: For this connection you need to use a cross-over Ethernet cable.

4. You can now use the wireless network.

5. For further functionality and security, the *Action*tec Wireless Access Point can be configured using the *Action*tec Wireless Access Point Configuration utility and the Web Interface.

6. Install the wireless client computer(s).

Installing the Wireless Access Point

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electronic equipment. All guidelines in this manual and of the computer manufacturer must therefore be followed at all times to ensure the safe use of the equipment.

Important Notice

This device is a 2.4 GHz low power RF device intended for home and office use in all EU member states except in France where restrictive use applies. For further information, refer to "Regulatory notes and statements"

Physical Installation of the Actiontec 11 Mbps Wireless Access Point

For the best performance and range, the *Action*tec Wireless Access Point needs to be placed in an upright vertical position as shown in Figure 4.

Figure 4: Actiontec 11 Mbps Wireless Access Point

The *Action*tec Wireless Access Point can be installed in 2 different ways:

On a desktop.

- Determine a clear area on your desktop where the *Action*tec Wireless Access Point can be placed in an upright position clear of obstructions.

Figure 5: Actiontec Wireless Access Point on a desktop

Mounted on a wall.

Prior to drilling holes into a wall, make sure the wall area of interest is clear of electrical wiring or water pipes.

- Determine the position of the screws and mark with a pencil.
- Drill holes in the wall at the location of the marks.
- Insert plastic lugs into the holes
- Fasten the screws into the plastic lugs, making sure to leave a 3mm distance as clearance between the wall and screw heads.
- Mount the *Action*tec Wireless Access Point onto the screws.

Figure 6: Actiontec Wireless Access Point on a wall

Connecting the Access Point to a Network

Now that your *Action*tec Wireless Access Point has been installed, it is ready to be connected to the power outlet and to your wired network.

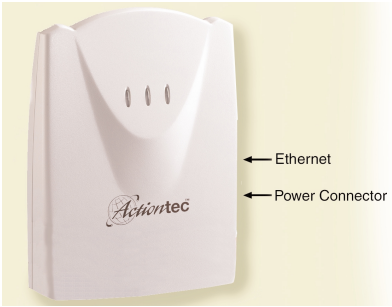
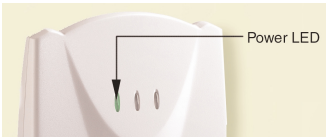


Figure 7: Actiontec Wireless Access Point connectors

1. Attach the power adapter output connector to the *Action*tec Wireless Access Point, plug it into an AC outlet and check the power LED to confirm if you are connected properly.



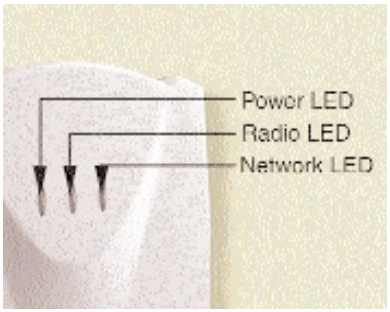
2. Identify the Ethernet port, which is located next to the power connector on the *Action*tec Wireless Access Point.

3. Attach the Ethernet cable to the *Action*tec Wireless Access Point and connect the cable on the other end to either a hub in the network or a computer. Please see the note below for proper connection.

- If the *Action*tec Wireless Access Point is connected to an Ethernet switch or hub, a "normal" (not a cross-wired) Ethernet cable must be used.
- If the *Action*tec Wireless Access Point is connected directly to a computer, a "cross-wired" (not a normal) Ethernet cable must be used.
- Connecting to a switched Ethernet port is recommended so that the full 11 Mbps bandwidth of the Access Point is dedicated.

LEDs

There are three LEDs (Light emitting diodes) on the *Action*tec Wireless Access Point. These visual aids can help you verify proper operation.



Power The power LED lights up when the Access Point is connected to a power source.

Radio The radio LED blinks when the Access Point is actively connected with wireless clients.

Network The network LED lights up when the Access Point is connected or actively exchanging Ethernet packets.

Figure 8: Actiontec Wireless Access Point LEDs

Configuring the Wireless Access Point

The *Action*tec Wireless Access Point is a ready to use device. It is delivered with default settings that allow you to have access to it without configuring it. When you do configure the *Action*tec Wireless Access Point, you can change the settings with respect to security, radio channels, etc.

Whether you need to configure the *Action*tec Wireless Access Point or not, depends entirely on how you apply the *Action*tec Wireless Access Point to your environment.

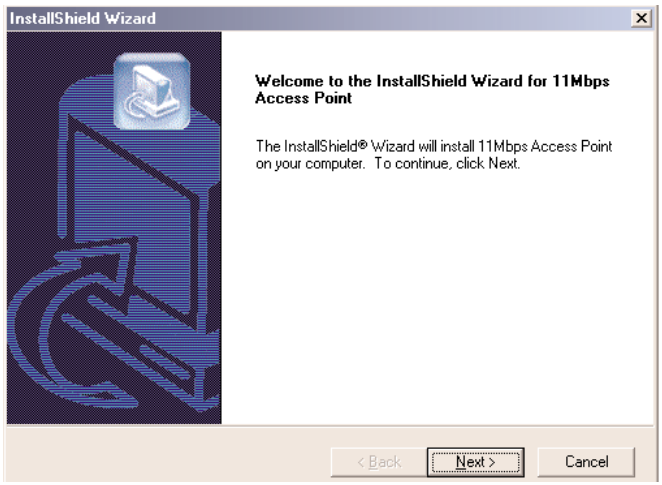
Configuring the Wireless Access Point means installing settings with respect to the use of security, radio channels, identification, etc. You only need to configure the Wireless Access Point when you want to change these settings.

Note: Not configuring your *Action*tec Wireless Access Point will make the network accessible to anyone. If you prefer that others not be able to connect to the Access Point, we recommend that you at least configure the security settings

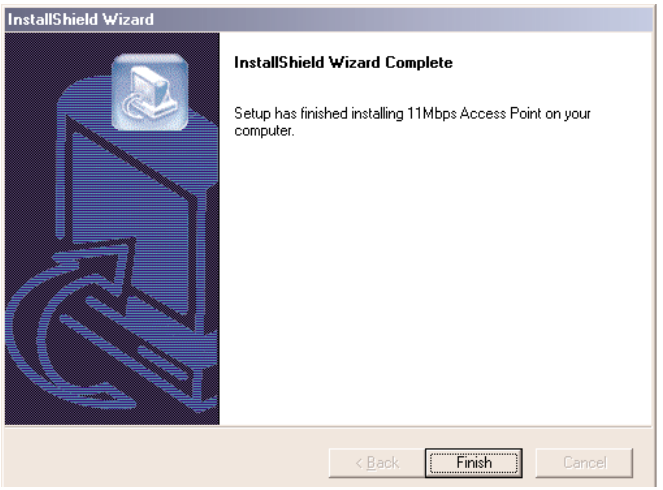
Installing the Actiontec Access Point Configuration Utility

1. Place the *Action*tec Wireless Access Point Installation CD-ROM in the computer's CD-ROM drive of the computer that is connected to the Access Point. (The InstallShield Wizard will launch when drive door closes.) If the InstallShield Wizard has not launched, look for the file named SETUP.EXE under the *Action*tec Wireless Access Point Installation CD-ROM's root directory and double click on it.

2. The Installation wizard will execute the InstallShield Wizard and present the following screen. Click on **Next** to continue.


InstallShield Wizard
Welcome to the InstallShield Wizard for 11Mbps Access Point
The InstallShield® Wizard will install 11Mbps Access Point on your computer. To continue, click Next.
< Back
Next >
Cancel

3. The Install Shield Wizard will proceed to install the *Action*tec Wireless Access

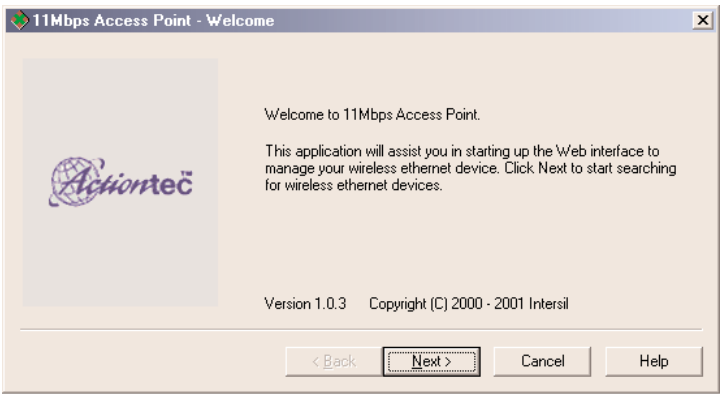


Point Configuration Utility. Once completed click **Finish** to continue.

4. Once the process has completed, you will be returned to the Windows Desktop. You can now use the *Action*tec Wireless Access Point Configuration Utility.

Launching the Actiontec Wireless Access Point Configuration Utility

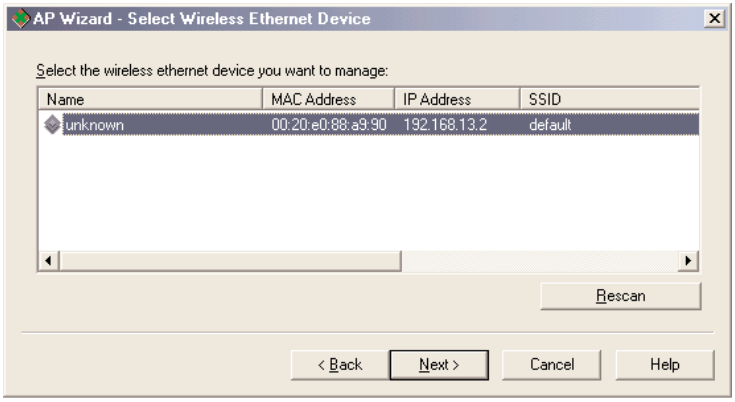
1. The *Action*tec Wireless Access Point Configuration Utility is started from the Start Menu by clicking on **Programs**, then **11Mbps Access Point** followed by **Configuration Utility.**


11Mbps Access Point - Welcome
Welcome to 11Mbps Access Point.
This application will assist you in starting up the Web interface to manage your wireless ethernet device. Click Next to start searching for wireless ethernet devices.
Version 1.0.3 Copyright (C) 2000 - 2001 Intersil
< Back
Next >
Cancel
Help

2. Once the application starts, click **Next** to continue.
The *Action*tec Wireless Access Point Configuration Utility will now search for all

Access Points within range, whether they have been configured properly or not.

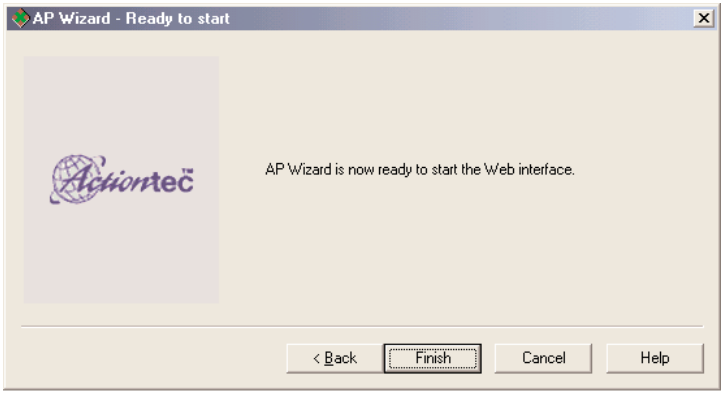
3. In the 'Select wireless ethernet device' dialog, select the *Action*tec Wireless Access Point you want to configure from the list. Once the *Action*tec Wireless Access



Point is selected, click **Next** to continue.
If the Access Point you are looking for does not appear in the list, click **Rescan**. The *Action*tec Wireless Access Point Configuration Utility will search for the *Action*tec Wireless Access Point again. For example, use this to find Access Points that have just been switched on or reset.

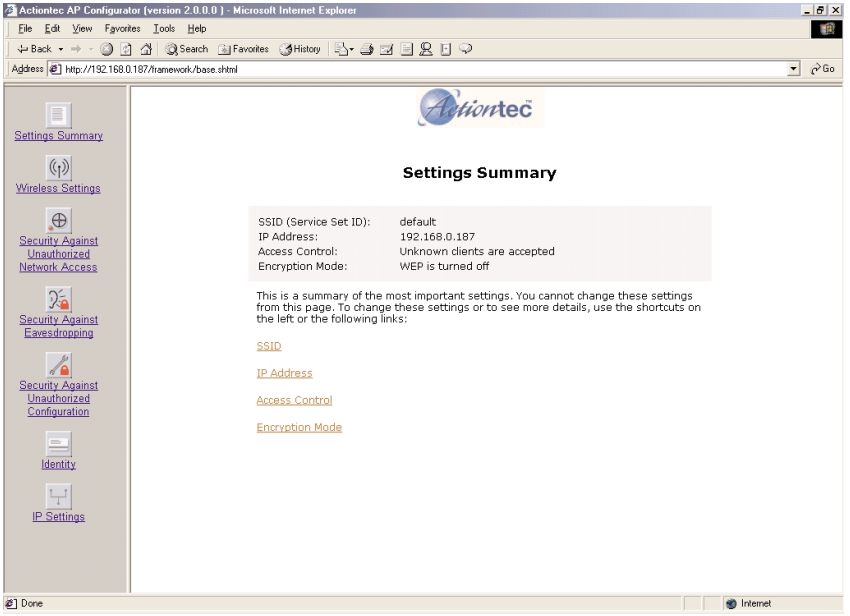
These devices may take up to a minute to find the Access Point's IP address, and they will not appear in the list until then. If the device that you want to manage is not in the list and is not found after clicking the Rescan button, refer to the troubleshooting guide for help.

4. Once the '*Action*tec Wireless Access Point Configuration Utility Ready-to-Start' window appears, you are ready to start the Web Interface. Click on Finish to continue.



Starting the Web Interface

Once the *Action*tec Wireless Access Point Configuration Utility has finished and the *Action*tec Wireless Access Point is available for configuration in the network, the Web Interface application is launched in a web browser. This will look like you are browsing a Web site on the Internet, but in reality you are connecting directly with the Access Point.


Actiontec AP Configurator (version 2.0.0.0) - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://192.168.0.187/framework/base.shtml
Go
Settings Summary
Wireless Settings
Security Against Unauthorized Network Access
Security Against Eavesdropping
Security Against Unauthorized Configuration
Identity
IP Settings
Actiontec
Settings Summary
SSID (Service Set ID): default
IP Address: 192.168.0.187
Access Control: Unknown clients are accepted
Encryption Mode: WEP is turned off
This is a summary of the most important settings. You cannot change these settings from this page. To change these settings or to see more details, use the shortcuts on the left or the following links:
SSID
IP Address
Access Control
Encryption Mode
Done
Internet

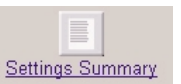
- You can now edit the settings for the *Action*tec Wireless Access Point

Web Interface Contents

The Web Interface application allows you to view and carry out setting changes for the *Action*tec Wireless Access Point. Refer to this list when changing your *Action*tec Wireless Access Point internal settings.

Settings Summary

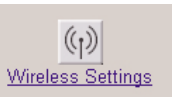
This page contains a summary of settings for the *Action*tec Wireless Access Point.



- To display the Settings Summary page, click
- This is only an information screen and does not allow changes.

Wireless Settings

Here you can install items such as the identification of the device and the radio channel.



- **SSID:** This is the Service Set ID. Only the *Action*tec Wireless Access Point and clients that share the same Service Set ID (SSID) are able to communicate with each other. Make sure that the *Action*tec Wireless Access Point and the access computer share the same name.

- **Radio Channel:** This is the channel that the *Action*tec Wireless Access Point uses to transmit and receive information. The channel that you select here is restricted to the channels that can be used within your Regulatory Domain.

- **Regulatory Domain:** The Regulatory Domain is displayed here. Every region or country has a regulatory body which governs the use of radio channels (This is a factory setting and cannot be changed).

- To display the Wireless Settings page, click Here you will be able to change the following settings:

Security Against Unauthorized Network Access

order to protect against unauthorized network access, the *Action*tec Wireless Access Point can create an Access Control List (ACL).

- To display the Security Against Unauthorized Network Access page click on the icon
  - **All clients are accepted:** When you select this option, you allow access to all PC Cards, except for ones that you specified as denied in the exception list. This option can be useful if you do not want to keep track of all PC Cards, knowing that some PC Cards will need to be denied access because they are not accounted for.

  - **Deny all clients:** When you select this option, you deny access to all PC Cards except the ones you specified as accepted in the exception list.

- You can choose to allow access to all client computers or deny access to all client computers, and create a list of exceptions for both options.

Once you have selected whether you want to allow access to all clients or deny access to all clients, you can create an exception list.

Note: The title of the exception list reads:

- **"denied clients"** This enables you to deny access to all clients.

- **"accepted clients"** This allows access to all clients.

Adding a client computer to the exception list

To add a client computer to the exception list, the following steps must be followed:

- Click on '**Add Client**'
- In the '**Mac Address**' field, enter the MAC address of the client that you want to allow or deny access to. Tip: The "MAC Address" is also known as the gardware address.
- Click '**OK**' to finish adding the client computer to the exception list.

Deleting a client computer from the exception list

To delete a client computer to the exception list, follow these steps:

- Click on **'Delete Client'**
- Select the **'Mac Address(es)'** of the client(s) that you want to remove from the list.
- Click **'OK'** to finish updating the exception list.

Security Against Eavesdropping

The *Action*tec Wireless Access Point provides encryption to secure the data flow over the air to and from the Access Point. This can be configured in the 'Security against eavesdropping' page.

- To display the 'Security against eavesdropping' page, click: The security features available are:
- **Open System:** When you select this option, clients have access without the WEP encryption key (password).
- **WEP:** When you select this option, you activate WEP security. When you select this feature, the '**Enter the WEP Settings**' dialog is displayed.

Change WEP Settings

When you select the **WEP** radio button or click the '**Change Settings**' link, the '**Enter the WEP Settings**' dialog becomes available.

- To change these settings: Select the WEP mode: 40 bit or 104 bit. This is the length of the key you'll need to enter. For WEP 40-bit, the key is 10 characters long. For WEP 104- bit, the key is 26 characters long. The longer the key, the harder it is to crack the encryption. However, if you plan to use the product with product from another vendor, please be advised that only 40 bit encryption is found under Wi-Fi certification testing. Consequently, 104 bit encryption may or may not work with another vendor's product.

- Enter a password:
  - WEP 40: the key must contain exactly 10 characters
  For example: 02f4e621ac
  - WEP 104: the key must contain exactly 26 characters.
  For example: 02f4e621ac29183ac6b4f9a3e1

Note: WEP uses a key base along with other encryption algorithms to insure a secure link, therefore only the following alphanumeric characters are allowed in the key:
- 0 to 9,
- a to f.

- Click OK.

Security Against Unauthorized Configuration

The *Action*tec Wireless Access Point provides a method for password protecting the device that is known as the WCS (Write Community String). When you set a password, you can only make changes to the *Action*tec Wireless Access Point by supplying the correct password.

The *Action*tec Wireless Access Point can also be locked to insure that no one can change its configuration. In order to unlock the device, you need to press the hardware reset button. This increases security so that only people who can physically access the Access Point, will be able to change its configuration.

- To display the 'security against unauthorized configuration' page, click

Change Password

- Click on the button '**Change Password**' and a window opens in where you can enter the password "WCS" (twice).

- Click OK. The change is applied, and a dialog asking for a user name and password appears. Leave the '**user name**' field empty, and in the '**password**' field, enter the password (WCS) you just chose.

Once you have set a password (WCS) , anyone who opens the Web Interface will be presented with a dialog asking for a user name and password. Leave the '**user name**' field empty, and in the '**password**' field, enter the password (WCS).

Locking the Actiontec Wireless Access Point

- Click on the button 'Lock' *Action*tec Wireless Access Point.
  A warning appears: "Are you sure you want to lock the Access Point?" This will immediately prevent making configuration changes. You will still be

able to view the current settings.

- Click on 'OK' to lock the *Action*tec Wireless Access Point.
  At this point, no additional configuration changes to the *Action*tec Wireless Access Point are allowed.
  To unlock the *Action*tec Wireless Access Point. refer to **Frequently Asked Questions**' "Unlocking the *Action*tec Wireless Access Point."

Identity

This page displays all the physical information on the *Action*tec Wireless Access Point.

- To display the 'identity' page, click

  Here you will be able to make changes to the following settings:

  - **Location:** This is a text field in which you can enter where the Access Point is installed ("Room 412").

    You can put any text into this field. The text has no influence on how the Access Point works.

  - **Contact:** This is a text field in which identifies the name of the systems administrator responsible for the Access Point ("admin@domain.com").

    You can put any text into this field. The text has no influence on how the Access Point works.

  - **Mac address:** The MAC address is displayed here.

  - **Access Point Type:** Information on your type of Access Point is displayed here.

  - **Firmware version:** The version of Access Point firmware is displayed here.

When you have entered or changed your data:

- Click '**Cancel**' to discard the changes.
- Click '**Apply**' to apply the changes to the Access Point.

IP Settings

This page displays all the IP Settings for the *Action*tec Wireless Access Point.

- To display the 'IP Settings' page, click

On this page, the following settings are displayed:

- IP Address
- Subnet mask
- Gateway

It is not possible to change these addresses from within the Web Interface.

If you want to change the IP settings of an Access Point that already has proper IP settings, you need to use the *Action*tec Wireless Access Point Configuration Utility and change them manually.

Troubleshooting

The *Action*tec Wireless Access Point is a reliable device and its designed to operate unattended. We have recognized some of the potential problems that may arise during setup and installation, therefore; we have compiled a set of solutions to the most common problems. These answers will help you in achieving a flawless operation of this device.

The Configuration Utility does not find the *Action*tec Wireless Access Point.

Possible Cause	Solution
Is the *Action*tec Wireless Access Point powered up?	Check the power LED to insure that the access point is connected to an electrical source.
No link with the Wireless card in your computer.	Check the radio signal LED on the wireless card for possible range problems.
Is there a Network connection?	Check the network LED, the Access Point may take up to a minute to find an IP Address it can use if Auto IP is used to assign an IP address.
Client cannot make connection.	A wireless client is not (yet) connected to the Access Point. Refer to the manual of the wireless client on how to connect.
Has the proper Network cable been used?	If the Access Point is connected to a hub, a 'normal' (not a cross-wired) cable must be used If the Access Point is connected directly to a computer, a cross-wired cable must be used.

Browser starts but window stays empty.

Possible Cause	Solution
Your browser uses a proxy server to connect to the Web Interface.	Reconfigure proxy settings in your browser. In any browser, make sure you have the browser to enable 'Bypass Proxy server for local address'

Frequently Asked Questions

How far can I be from the access point and maintain a connection?

- The indoor range is approximately 50 to 100 meters (165 to 330 feet). The outdoor range is 300 meters (1000 feet) or more.

How fast is the Wireless Network?

- The data rate at optimal conditions is 11 Mbps. This rate does vary depending on the distance from the access point and the amount of attenuation (physical barriers, such as walls, glass, etc.) the signal must go through. The data rate will automatically shift down to 5.5 Mpbs, 2 Mbps and 1 Mbps to maintain the connection where necessary.

Can I connect a DSL or Cable Modem to it?

- Yes, provided the DSL or Cable modem has an Ethernet UTP connector.

Can I share theInternet through the *Action*tec Wireless Access Point?

- Yes. To accomplish this you need to set up your network as follows:
  1. Install a gateway
  2. Connect the gateway to your internet connection.
  3. Connect the gateway to your Access Point.
  4. Install Wireless network cards in your clients.
  5. Configure the clients to connect to the Access Point and the gateway.

Does it provide roaming capabilities?

- Yes. When the *Action*tec Wireless Access Point is used in conjunction with other Access Points, as in the case of campuses and larger offices, users can roam within the network provided all Access Points are set to the same Service Set ID (SSID) correctly and are connected to the same Ethernet LAN. Although the device allows roaming, it is not a signal repeater and is limited to the range between the Access Point and the client computer.

Does it provide network traffic filtering capabilities?

- No. The *Action*tec Wireless Access Point is not an Integrated Access Device (IAD). For network traffic filtering capabilities a firewall or similar must be used.

Does it provide load balancing capabilities?

- No. The *Action*tec Wireless Access Point is not designed to track the load on the network resources. This is just a data transport device.

How do I unlock the Access Point?

The *Action*tec Wireless Access Point factory default settings allow immediate access

without configuration. The Configuration utility has been provided for further configuring of the device. The *Action*tec Wireless Access Point can be locked to prevent changes to security and network access through KickStart.
The *Action*tec Wireless Access Point can be unlocked either through the use of the KickStart Utility or through hardware unlock feature.

The *Action*tec Wireless Access Point unlock/reset button is found below the power connector and UTP (Ethernet) connector. It is a small red button.

How do I unlock the Access Point so I can reconfigure it?

To unlock the Access Point so that the configuration changes are allowed again:

- Press the red button found below the power connector and UTP (Ethernet) connector briefly.
- The *Action*tec Wireless Access Point lock is unlocked. All settings, including IP settings, are retained.
- You can now use the Web Interface to manage the Access Point again.

How do I reset the Access Point to its factory settings?

If the reset button is pressed for more than 5 seconds, the *Action*tec Wireless Access Point will be reset to the default factory settings:

- Press the red button found below the power connector and UTP (Ethernet) connector and keep it pressed down.
- The radio LED will first light up constantly.
- Release the reset button when the LED has stopped lighting.
- All settings are deleted.
- Use the Configuration Utility to install new IP settings.(If you have a DHCP server the IP settings will probably remain the same.)
- You can now use the Web Interface to manage the Access Point again.

Can I launch the Web Interface Manually?

If you know the IP address of the *Action*tec Wireless Access Point, you can manually open the Web Interface in a web browser, just as you would any other web page.

- Open a web browser.
- Type in the web address of the *Action*tec Wireless Access Point on the address bar as follows: http://IP address of the Access Point/
- You can bookmark the web address for the web Interface for easier access.

Wireless LAN, Health and Authorization for use Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far much less than the electromagnetic energy emissions from wireless devices like for example mobile phones. Wireless LAN devices are safe for use by consumers, because they operate within the guidelines found in radio frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

- On board of airplanes, or
- In an explosive environment, or
- In case the interference risk to other devices or services is perceived or identified as harmful.

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.
The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution or attachment of connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment.
Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

USA-FCC (Federal Communications Commission) statement

This device complies with Part 15 of FCC Rules.
Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. this device must accept any interference, including interference that may cause un-desired operation of this device.

FCC Interference Statement

This device complies with Part 15 of FCC Rules., as well as ICES 003 B / NMB 003 B. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation. Modifications not expressly authorized by Actiontec Electronics may invalidate the user's right to operate this equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

FCC Radio Frequency Exposure statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65C and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices.
The radiated output power of this Wireless LAN device is far below the FCC radio frequency exposure limits.
Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized. When using this device, a certain separation distance between antenna and nearby persons has to be kept to ensure RF exposure compliance. In order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm (8 inches).

Export restrictions

This product or software contains encryption code which may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license.

*Action*tec Electronics, Inc. Limited Warranty

Hardware: *Action*tec Electronics Inc. warrants to the end user ("Customer") that this hardware product will be free from defects in workmanship and materials, under normal use and service, for twelve (12) months from the date of purchase from *Action*tec Electronics or its authorized reseller.

Action**tec Electronics'** sole obligation under this express warranty shall be, at *Action*tec's option and expense, to repair the defective product or part, deliver to Customer an equivalent product or part to replace the defective item, or if neither of the two foregoing options is reasonably available, *Action*tec Electronics may, in its sole discretion, refund to Customer the purchase price paid for the defective product. All products that are replaced will become the property of *Action*tec Electronics Inc. Replacement products may be new or reconditioned. *Action*tec Electronics warrants any replaced or repaired product or part for ninety (90) days from shipment, or the remainder of the initial warranty period, whichever is longer.

SOFTWARE: *Action*tec Electronics warrants to Customer that each software program licensed from it will perform in substantial conformance to its program specifications, for a period of ninety (90) days from the date of purchase from *Action*tec Electronics or its authorized reseller. *Action*tec Electronics warrants the media containing software against failure during the warranty period. The only updates that will be provided are at the sole discretion of *Action*tec Electronics and will only be available for download at the *Action*tec website, www.*action*tec.com. *Action*tec Electronics' sole obligation under this express warranty shall be, at *Action*tec Electronics' option and expense, to refund the purchase price paid by Customer for any defective software product, or to replace any defective media with software which substantially conforms to applicable *Action*tec Electronics published specifications. Customer assumes responsibility for the selection of the appropriate applications program and associated reference materials. *Action*tec Electronics makes no warranty or representation that its software products will meet Customer's requirements or work in combination with any hardware or applications software products provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected. For any third-party products listed in the *Action*tec Electronics software product documentation or specifications as being compatible, *Action*tec Electronics will make reasonable efforts to provide compatibility, except where the non-compatibility is caused by a "bug" or defect in the third party's product or from use of the software product not in accordance with *Action*tec Electronics published specifications or User Guide.

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THIS *ACTION*TEC ELECTRONICS WARRANTY DOES NOT APPLY TO SUCH THIRD-PARTY SOFTWARE. FOR THE APPLICABLE WARRANTY, PLEASE REFER TO THE END-USER LICENSE AGREEMENT GOVERNING THE USE OF SUCH SOFTWARE.

OBTAINING WARRANTY SERVICE: Customer may contact *Action*tec Electronics Technical Support Center within the applicable warranty period to obtain warranty service authorization. Dated proof of purchase from *Action*tec Electronics or its authorized reseller may be required. Products returned to *Action*tec Electronics must be pre-authorized by *Action*tec Electronics with a Return Merchandise Authorization (RMA) number marked on the outside of the package, and sent prepaid and packaged appropriately for safe shipment, and it is recommended that they be insured or sent by a method that provides for tracking of the package. The repaired or replaced item will be shipped to Customer, at *Action*tec Electronics' expense, not later than thirty (30) days after *Action*tec Electronics receives the defective product.
Return the product to:

In the United States
*Action*tec Electronics, Inc
760 North Mary Avenue
Sunnyvale, CA 94085

*Action*tec Electronics shall not be responsible for any software, firmware, information or memory data or Customer contained in, stored on, or integrated with any products returned to Actiontec Electronics for repair, whether under warranty or not

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WARRANTIES EXCLUSIVE: IF AN *ACTION*TEC ELECTRONICS' PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY FOR BREACH OF THAT WARRANTY SHALL BE REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT *ACTION*TEC ELECTRONICS' OPTION. TO THE FULL EXTENT ALLOWED BY LAW, THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, TERMS OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES, TERMS OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, CORRESPONDENCE WITH DESCRIPTION, AND NON-INFRINGEMENT, ALL OF WHICH ARE EXPRESSLY DISCLAIMED . *ACTION*TEC ELECTRONICS NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE OR USE OF ITS PRODUCTS.

*ACTION*TEC ELECTRONICS SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE

ALLEGED DEFECT OR MALFUNCTION IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLECT, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPT TO OPEN, REPAIR OR MODIFY THE PRODUCT, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, OTHER HAZARDS OR ACTS OF GOD.

LIMITATION OF LIABILITY: TO THE FULL EXTENT ALLOWED BY LAW, *ACTION*TEC ELECTRONICS ALSO EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCT, EVEN IF *ACTION*TEC ELECTRONICS OR ITS AUTHORIZED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT,OR REFUND OF THE PURCHASE PRICE PAID, AT *ACTION*TEC ELECTRONICS' OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

DISCLAIMER: Some countries, states or provinces do not allow the exclusion or limitation of implied warranties or the limitation of incidental or consequential damages for certain products supplied to consumers, or the limitation of liability for personal injury, so the above limitations and exclusions may be limited in their application to you. When the implied warranties are not allowed to be excluded in their entirety, they will be limited to the duration of the applicable written warranty. This warranty gives you specific legal rights which may vary depending on local law.

DISPUTE RESOLUTION: The customer may contact the Director of Technical Support in the event the Customer is not satisfied with *Action*tec Electronics response to the complaint. In the event that the Customer is still not satisfied with the response of the Director of Technical Support, the Customer is instructed to contact the Director of Marketing. In the event that the Customer is still not satisfied with the response of the Director of Marketing, the Customer is instructed to contact the Chief Financial Officer and/or President.

GOVERNING LAW: This Limited Warranty shall be governed by the laws of the State of California, U.S.A. excluding its conflicts of laws principles and excluding the United Nations Convention on Contracts for the International Sale of Goods.